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<213> Homo sapiens
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<212> PRT
<213> Homo sapiens

<400> 4
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Lys Leu Asn Arg Tyr Ser Asp Gly Leu Leu Arg Phe Gly Phe Ser Gln
            35                  40                  45

Asp Ser Gly His Gly Lys Ser Ser Ser Lys Met Gly Lys Ser Glu Asp
    50                  55                  60

Phe Phe Tyr Ile Lys Val Ser Gln Lys Ala Arg Gly Ser His His Pro
65                  70                  75                  80

Asp Tyr Thr Ala Leu Ser Ser Gly Asp Leu Gly Gly Gln Ala Gly Val
                85                  90                  95
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Asp Phe Asp Pro Ser Thr Pro Pro Lys Leu Met Pro Phe Ser Asn Gln
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Leu Glu Met Gly Ser Glu Lys Gly Ala Val Arg Pro Thr Ala Phe Lys
        115   120   125

Pro Val Leu Pro Arg Ser Gly Ala Ile Leu His Ser Ser Pro Glu Ser
    130   135   140

Ala Ser His Gln Leu His Pro Ala Pro Pro Asp Lys Pro Lys Glu Gln
145   150   155   160

Glu Leu Lys Pro Gly Leu Cys Ser Gly Ala Leu Ser Asp Ser Gly Arg
            165   170   175

Asn Ser Met Ser Ser Leu Pro Thr His Ser Thr Ser Ser Ser Tyr Gln
            180   185   190

Leu Asp Pro Leu Val Thr Pro Val Gly Pro Thr Ser Arg Phe Gly Gly
        195   200   205

Ser Ala His Asn Ile Thr Gln Gly Ile Val Leu Gln Asp Ser Asn Met
    210   215   220

Met Ser Leu Lys Ala Leu Ser Phe Ser Asp Gly Gly Ser Lys Leu Gly
225   230   235   240

His Ser Asn Lys Ala Asp Lys Gly Pro Ser Cys Val Arg Ser Pro Ile
            245   250   255

Ser Thr Asp Glu Cys Ser Ile Gln Glu Leu Glu Gln Lys Leu Leu Glu
            260   265   270

Arg Glu Gly Ala Leu Gln Lys Leu Gln Arg Ser Phe Glu Glu Lys Glu
        275   280   285

Leu Ala Ser Ser Leu Ala Tyr Glu Glu Arg Pro Arg Arg Cys Arg Asp
    290   295   300

Glu Leu Glu Gly Pro Glu Pro Lys Gly Gly Asn Lys Leu Lys Gln Ala
305   310   315   320

Ser Gln Lys Ser Gln Arg Ala Gln Gln Val Leu His Leu Gln Val Leu
            325   330   335

Gln Leu Gln Gln Glu Lys Arg Gln Leu Arg Gln Glu Leu Glu Ser Leu
        340   345   350

Met Lys Glu Gln Asp Leu Leu Glu Thr Lys Leu Arg Ser Tyr Glu Arg
        355   360   365

Glu Lys Thr Ser Phe Gly Pro Ala Leu Glu Glu Thr Gln Trp Glu Val
    370   375   380

Cys Gln Lys Ser Gly Glu Ile Ser Leu Leu Lys Gln Gln Leu Lys Glu
385   390   395   400

Ser Gln Thr Glu Val Asn Ala Lys Ala Ser Glu Ile Leu Gly Leu Lys
                405   410   415

Ala Gln Leu Lys Asp Thr Arg Gly Lys Leu Glu Gly Leu Glu Leu Arg
                420   425   430

Thr Gln Asp Leu Glu Gly Ala Leu Arg Thr Lys Gly Leu Glu Leu Glu
                435   440   445

Val Cys Glu Asn Glu Leu Gln Arg Lys Lys Asn Glu Ala Glu Leu Leu
        450   455   460

Arg Glu Lys Val Asn Leu Leu Glu Gln Glu Leu Gln Glu Leu Arg Ala
465   470   475   480

Gln Ala Ala Leu Ala Arg Asp Met Gly Pro Pro Thr Phe Pro Glu Asp
                485   490   495

Val Pro Ala Leu Gln Arg Glu Leu Glu Arg Leu Arg Ala Glu Leu Arg
                500   505   510

Glu Glu Arg Gln Gly His Asp Gln Met Ser Ser Gly Phe Gln His Glu
                515   520   525

Arg Leu Val Trp Lys Glu Glu Lys Glu Lys Val Ile Gln Tyr Gln Lys
        530   535   540

Gln Leu Gln Gln Ser Tyr Val Ala Met Tyr Gln Arg Asn Gln Arg Leu
545   550   555   560

Glu Lys Ala Leu Gln Gln Leu Ala Arg Gly Asp Ser Ala Gly Glu Pro
                565   570   575

Leu Glu Val Asp Leu Glu Gly Ala Asp Ile Pro Tyr Glu Asp Ile Ile
                580   585   590

Ala Thr Glu Ile
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<212> PRT
<213> Homo sapiens

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                20   25   30

Lys Leu Asn Arg Tyr Ser Asp Gly Leu Leu Arg Phe Gly Phe Ser Gln
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Asp Ser Gly His Gly Lys Ala Met Thr Arg Cys Pro Arg Ala Ser Ser
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Met Ser Gly Ser Cys Gly Arg Arg Arg Arg Arg Arg
65   70   75

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<211> 69
<212> PRT
<213> Homo sapiens

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Leu Lys Gln Ala Ser Gln Lys Ser Gln Arg Ala Gln Gln Val Leu His
            20   25   30

Leu Gln Val Leu Gln Leu Gln Gln Glu Lys Arg Gln Leu Arg Gln Glu
        35   40   45

Leu Glu Ser Leu Met Lys Glu Gln Asp Leu Leu Glu Thr Lys Leu Arg
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Ser Tyr Glu Arg Glu
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<212> PRT
<213> Homo sapiens

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Ile Ser Arg Arg Arg Arg Glu Lys Glu Asn Pro Lys Glu Arg Asn Lys
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Met Ala Ala Ala Lys Cys Arg Asn Arg Arg Arg Glu Leu Thr Asp Thr
            20   25   30

Leu Gln Ala Glu Thr Asp Gln Leu Glu Asp Glu Lys Ser Ala Leu Gln
            35   40   45

Thr Glu Ile Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe Ile
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Leu Ala Ala His
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<211> 69
<212> PRT
<213> Homo sapiens

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          20                25                30

Leu Gln Val Leu Arg Leu Gln Gln Asp Lys Lys Gln Leu Gln Glu Glu
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Ala Ala Arg Leu Met Arg Gln Arg Glu Glu Leu Glu Asp Lys Val Ala
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Ala Cys Gln Lys Glu
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<213> Homo sapiens


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<212> DNA
<213> Homo sapiens


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<212> DNA
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<213> Homo sapiens

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<212> DNA
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tcgcagaaga gccagcgcgc gcagcaggtc ctgcacctgc aggtactgca gcttcagcag 1020
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accaagctca ggtcctacga gagggagaag accagcttcg gccccgcgct ggaggagacc 1140
cagtgggagg tgtgccagaa gtcaggcgag atctccctcc tgaagcagca gctgaaggag 1200
tcccagacgg aggtgaacgc caaggctagc gagatcctgg gtctcaaggc acagctgaag 1260
gacacgcggg gcaagctgga gggcctggag ctgaggaccc aggacctgga gggcgccctg 1320
cgcaccaagg gcctggagct ggaggtctgt gagaatgagc tgcagcgcaa gaagaacgag 1380
gcggagctgc tgcgggagaa ggtgaacctg ctggagcagg agctgcagga gctgcgggcc 1440
caggccgccc tggcccgcga catggggccg cccaccttcc ccgaggacgt ccctgccctg 1500
cagcgggagc tggagcggct cgtgtggaag gaggagaagg agaaggtgat tcagtaccag 1560
aaacagctgc agcagagcta cgtggccatg taccagcgga accagcgcct ggagaaggcc 1620
ctgcagcagc tggcacgtgg ggacagcgcc ggggagccct ggaggttga cctggaaggg 1680
gctgacatcc cctacgagga catcatagcc actgagatct ga            1722
```

<210> 15
<211> 76
<212> PRT
<213> Homo sapiens

<400> 15

```
Met Gly Ser Val Ser Ser Leu Ile Ser Gly His Ser Phe His Ser Lys
 1               5                  10                  15

His Cys Arg Ala Ser Gln Tyr Lys Leu Arg Lys Ser Ser His Leu Lys
            20                  25                  30

Lys Leu Asn Arg Tyr Ser Asp Gly Leu Leu Arg Phe Gly Phe Ser Gln
            35                  40                  45

Asp Ser Gly His Gly Lys Ala Met Thr Arg Cys Pro Arg Ala Ser Ser
    50                  55                  60

Met Ser Gly Ser Cys Gly Arg Arg Arg Arg Arg
    65                  70                  75
```

<210> 16
<211> 210
<212> PRT
<213> Homo sapiens

<400> 16

```
Met Gly Ser Val Ser Ser Leu Ile Ser Gly His Ser Phe His Ser Lys
 1               5                  10                  15

His Cys Arg Ala Ser Gln Tyr Lys Leu Arg Lys Ser Ser His Leu Lys
            20                  25                  30

Lys Leu Asn Arg Tyr Ser Asp Gly Leu Leu Arg Phe Gly Phe Ser Gln
```

```
              35                      40                      45
Asp Ser Gly His Gly Lys Ser Ser Ser Lys Met Gly Lys Ser Glu Asp
        50                  55                  60

Phe Phe Tyr Ile Lys Val Ser Gln Lys Ala Arg Gly Ser His His Pro
65                  70                  75                      80

Asp Tyr Thr Ala Leu Ser Ser Gly Asp Leu Gly Gly Gln Ala Gly Val
                85                  90                      95

Asp Phe Asp Pro Ser Thr Pro Pro Lys Leu Met Pro Phe Ser Asn Gln
            100                 105                 110

Leu Glu Met Gly Ser Glu Lys Gly Ala Val Arg Pro Thr Ala Phe Lys
            115                 120                 125

Pro Val Leu Pro Arg Ser Gly Ala Ile Leu His Ser Ser Pro Glu Ser
    130                 135                 140

Ala Ser His Gln Leu His Pro Ala Pro Pro Asp Lys Pro Lys Glu Gln
145                 150                 155                 160

Glu Leu Lys Pro Gly Leu Cys Ser Gly Ala Leu Ser Asp Ser Gly Arg
                165                 170                 175

Asn Ser Met Ser Ser Leu Pro Thr His Ser Ala Gly Glu Pro Leu Glu
            180                 185                 190

Val Asp Leu Glu Gly Ala Asp Ile Pro Tyr Glu Asp Ile Ile Ala Thr
    195                 200                 205

Glu Ile
    210


<210> 17
<211> 537
<212> PRT
<213> Homo sapiens

<400> 17
Met Gly Ser Val Ser Ser Leu Ile Ser Gly His Ser Phe His Ser Lys
    1               5                   10                  15

His Cys Arg Ala Ser Gln Tyr Lys Leu Arg Lys Ser Ser His Leu Lys
                20                  25                  30

Lys Leu Asn Arg Tyr Ser Asp Gly Leu Leu Arg Phe Gly Phe Ser Gln
            35                  40                  45

Asp Ser Gly His Gly Lys Ser Ser Ser Lys Met Gly Lys Ser Glu Asp
        50                  55                  60

Phe Phe Tyr Ile Lys Val Ser Gln Lys Ala Arg Gly Ser His His Pro
65                  70                  75                      80
```

Asp Tyr Thr Ala Leu Ser Ser Gly Asp Leu Gly Gly Gln Ala Gly Val
            85   90   95

Asp Phe Asp Pro Ser Thr Pro Pro Lys Leu Met Pro Phe Ser Asn Gln
            100   105   110

Leu Glu Met Gly Ser Glu Lys Gly Ala Val Arg Pro Thr Ala Phe Lys
            115   120   125

Pro Val Leu Pro Arg Ser Gly Ala Ile Leu His Ser Ser Pro Glu Ser
    130   135   140

Ala Ser His Gln Leu His Pro Ala Pro Pro Asp Lys Pro Lys Glu Gln
145   150   155   160

Glu Leu Lys Pro Gly Leu Cys Ser Gly Ala Leu Ser Asp Ser Gly Arg
                165   170   175

Asn Ser Met Ser Ser Leu Pro Thr His Ser Thr Ser Ser Ser Tyr Gln
            180   185   190

Leu Asp Pro Leu Val Thr Pro Val Gly Pro Thr Ser Arg Phe Gly Gly
        195   200   205

Ser Ala His Asn Ile Thr Gln Gly Ile Val Leu Gln Asp Ser Asn Met
    210   215   220

Met Ser Leu Lys Ala Leu Ser Phe Ser Asp Gly Gly Ser Lys Leu Gly
225   230   235   240

His Ser Asn Lys Ala Asp Lys Gly Pro Ser Cys Val Arg Ser Pro Ile
                245   250   255

Ser Thr Asp Glu Cys Ser Ile Gln Glu Leu Glu Gln Lys Leu Leu Glu
            260   265   270

Arg Glu Gly Ala Leu Gln Lys Leu Gln Arg Ser Phe Glu Glu Lys Glu
        275   280   285

Leu Ala Ser Ser Leu Ala Tyr Glu Glu Arg Pro Arg Arg Cys Arg Asp
    290   295   300

Glu Leu Glu Gly Pro Glu Pro Lys Gly Gly Asn Lys Leu Lys Gln Ala
305   310   315   320

Ser Gln Lys Ser Gln Arg Ala Gln Gln Val Leu His Leu Gln Val Leu
            325   330   335

Gln Leu Gln Gln Glu Lys Arg Gln Leu Arg Gln Glu Leu Glu Ser Leu
        340   345   350

Met Lys Glu Gln Asp Leu Leu Glu Thr Lys Leu Arg Ser Tyr Glu Arg
        355   360   365

Glu Lys Thr Ser Phe Gly Pro Ala Leu Glu Glu Thr Gln Trp Glu Val
    370   375   380

Cys Gln Lys Ser Gly Glu Ile Ser Leu Leu Lys Gln Gln Leu Lys Glu
385   390   395   400

Ser Gln Thr Glu Val Asn Ala Lys Ala Ser Glu Ile Leu Gly Leu Lys
            405   410   415

Ala Gln Leu Lys Asp Thr Arg Gly Lys Leu Glu Gly Leu Glu Leu Arg
            420   425   430

Thr Gln Asp Leu Glu Gly Ala Leu Arg Thr Lys Gly Leu Glu Leu Glu
            435   440   445

Val Cys Glu Asn Glu Leu Gln Arg Lys Lys Asn Glu Ala Glu Leu Leu
            450   455   460

Arg Glu Lys His Glu Arg Leu Val Trp Lys Glu Glu Lys Glu Lys Val
465   470   475   480

Ile Gln Tyr Gln Lys Gln Leu Gln Gln Ser Tyr Val Ala Met Tyr Gln
                485   490   495

Arg Asn Gln Arg Leu Glu Lys Ala Leu Gln Gln Leu Ala Arg Gly Asp
            500   505   510

Ser Ala Gly Glu Pro Leu Glu Val Asp Leu Glu Gly Ala Asp Ile Pro
            515   520   525

Tyr Glu Asp Ile Ile Ala Thr Glu Ile
            530   535

<210> 18
<211> 504
<212> PRT
<213> Homo sapiens

<400> 18
Met Gly Ser Val Ser Ser Leu Ile Ser Gly His Ser Phe His Ser Lys
    1   5   10   15

His Cys Arg Ala Ser Gln Tyr Lys Leu Arg Lys Ser Ser His Leu Lys
            20   25   30

Lys Leu Asn Arg Tyr Ser Asp Gly Leu Leu Arg Phe Gly Phe Ser Gln
            35   40   45

Asp Ser Gly His Gly Lys Ser Ser Ser Lys Met Gly Lys Ser Glu Asp
    50   55   60

Phe Phe Tyr Ile Lys Val Ser Gln Lys Ala Arg Gly Ser His His Pro
65   70   75   80

Asp Tyr Thr Ala Leu Ser Ser Gly Asp Leu Gly Gly Gln Ala Gly Val
            85   90   95

Asp Phe Asp Pro Ser Thr Pro Pro Lys Leu Met Pro Phe Ser Asn Gln

Leu Glu Met Gly Ser Glu Lys Gly Ala Val Arg Pro Thr Ala Phe Lys
   115   120   125

Pro Val Leu Pro Arg Ser Gly Ala Ile Leu His Ser Ser Pro Glu Ser
   130   135   140

Ala Ser His Gln Leu His Pro Ala Pro Pro Asp Lys Pro Lys Glu Gln
145   150   155   160

Glu Leu Lys Pro Gly Leu Cys Ser Gly Ala Leu Ser Asp Ser Gly Arg
   165   170   175

Asn Ser Met Ser Ser Leu Pro Thr His Ser Thr Ser Ser Ser Tyr Gln
   180   185   190

Leu Asp Pro Leu Val Thr Pro Val Gly Pro Thr Ser Arg Phe Gly Gly
   195   200   205

Ser Ala His Asn Ile Thr Gln Gly Ile Val Leu Gln Asp Ser Asn Met
  210   215   220

Met Ser Leu Lys Ala Leu Ser Phe Ser Asp Gly Gly Ser Lys Leu Gly
225   230   235   240

His Ser Asn Lys Ala Asp Lys Gly Pro Ser Cys Val Arg Ser Pro Ile
   245   250   255

Ser Thr Asp Glu Cys Ser Ile Gln Glu Leu Glu Gln Lys Leu Leu Glu
   260   265   270

Arg Glu Gly Ala Leu Gln Lys Leu Gln Arg Ser Phe Glu Glu Lys Glu
   275   280   285

Leu Ala Ser Ser Leu Ala Tyr Glu Glu Arg Pro Arg Arg Cys Arg Asp
  290   295   300

Glu Leu Glu Gly Pro Glu Pro Lys Gly Gly Asn Lys Leu Lys Gln Ala
305   310   315   320

Ser Gln Lys Ser Gln Arg Ala Gln Gln Val Leu His Leu Gln Val Leu
   325   330   335

Gln Leu Gln Gln Glu Lys Arg Gln Leu Arg Gln Glu Leu Glu Ser Leu
   340   345   350

Met Lys Glu Gln Asp Leu Leu Glu Thr Lys Leu Arg Ser Tyr Glu Arg
   355   360   365

Glu Lys Thr Ser Phe Gly Pro Ala Leu Glu Glu Thr Gln Trp Glu Val
   370   375   380

Cys Gln Lys Ser Gly Glu Ile Ser Leu Leu Lys Gln Gln Leu Lys Glu
385   390   395   400

Ser Gln Thr Glu Val Asn Ala Lys Ala Ser Glu Ile Leu Gly Leu Lys

```
                405                    410                    415
```

Ala Gln Leu Lys Asp Thr Arg Gly Lys Leu Glu Gly Leu Glu Leu Arg
            420   425   430

Thr Gln Asp Leu Glu Gly Ala Leu Arg Thr Lys Gly Leu Glu Leu Glu
            435   440   445

Val Cys Glu Asn Glu Leu Gln Gln Ser Tyr Val Ala Met Tyr Gln Arg
        450   455   460

Asn Gln Arg Leu Glu Lys Ala Leu Gln Gln Leu Ala Arg Gly Asp Ser
465   470   475   480

Ala Gly Glu Pro Leu Glu Val Asp Leu Glu Gly Ala Asp Ile Pro Tyr
            485   490   495

Glu Asp Ile Ile Ala Thr Glu Ile
            500

<210> 19
<211> 563
<212> PRT
<213> Homo sapiens

<400> 19
Met Gly Ser Val Ser Ser Leu Ile Ser Gly His Ser Phe His Ser Lys
  1   5   10   15

His Cys Arg Ala Ser Gln Tyr Lys Leu Arg Lys Ser Ser His Leu Lys
            20   25   30

Lys Leu Asn Arg Tyr Ser Asp Gly Leu Leu Arg Phe Gly Phe Ser Gln
            35   40   45

Asp Ser Gly His Gly Lys Ser Ser Ser Lys Met Gly Lys Ser Glu Asp
        50   55   60

Phe Phe Tyr Ile Lys Val Ser Gln Lys Ala Arg Gly Ser His His Pro
65   70   75   80

Asp Tyr Thr Ala Leu Ser Ser Gly Asp Leu Gly Gly Gln Ala Gly Val
            85   90   95

Asp Phe Asp Pro Ser Thr Pro Pro Lys Leu Met Pro Phe Ser Asn Gln
            100   105   110

Leu Glu Met Gly Ser Glu Lys Gly Ala Val Arg Pro Thr Ala Phe Lys
            115   120   125

Pro Val Leu Pro Arg Ser Gly Ala Ile Leu His Ser Ser Pro Glu Ser
        130   135   140

Ala Ser His Gln Leu His Pro Ala Pro Pro Asp Lys Pro Lys Glu Gln
145   150   155   160
```

Glu Leu Lys Pro Gly Leu Cys Ser Gly Ala Leu Ser Asp Ser Gly Arg
                165               170               175

Asn Ser Met Ser Ser Leu Pro Thr His Ser Thr Ser Ser Tyr Gln
            180               185               190

Leu Asp Pro Leu Val Thr Pro Val Gly Pro Thr Ser Arg Phe Gly Gly
            195               200               205

Ser Ala His Asn Ile Thr Gln Gly Ile Val Leu Gln Asp Ser Asn Met
    210               215               220

Met Ser Leu Lys Ala Leu Ser Phe Ser Asp Gly Gly Ser Lys Leu Gly
225               230               235               240

His Ser Asn Lys Ala Asp Lys Gly Pro Ser Cys Val Arg Ser Pro Ile
            245               250               255

Ser Thr Asp Glu Cys Ser Ile Gln Glu Leu Glu Gln Lys Leu Leu Glu
            260               265               270

Arg Glu Gly Ala Leu Gln Lys Leu Gln Arg Ser Phe Glu Glu Lys Glu
            275               280               285

Leu Ala Ser Ser Leu Ala Tyr Glu Glu Arg Pro Arg Arg Cys Arg Asp
    290               295               300

Glu Leu Glu Gly Pro Glu Pro Lys Gly Gly Asn Lys Leu Lys Gln Ala
305               310               315               320

Ser Gln Lys Ser Gln Arg Ala Gln Gln Val Leu His Leu Gln Val Leu
            325               330               335

Gln Leu Gln Gln Glu Lys Arg Gln Leu Arg Gln Glu Leu Glu Ser Leu
            340               345               350

Met Lys Glu Gln Asp Leu Leu Glu Thr Lys Leu Arg Ser Tyr Glu Arg
    355               360               365

Glu Lys Thr Ser Phe Gly Pro Ala Leu Glu Glu Thr Gln Trp Glu Val
    370               375               380

Cys Gln Lys Ser Gly Glu Ile Ser Leu Leu Lys Gln Gln Leu Lys Glu
385               390               395               400

Ser Gln Thr Glu Val Asn Ala Lys Ala Ser Glu Ile Leu Gly Leu Lys
            405               410               415

Ala Gln Leu Lys Asp Thr Arg Gly Lys Leu Glu Gly Leu Glu Leu Arg
            420               425               430

Thr Gln Asp Leu Glu Gly Ala Leu Arg Thr Lys Gly Leu Glu Leu Glu
            435               440               445

Val Cys Glu Asn Glu Leu Gln Arg Lys Lys Asn Glu Ala Glu Leu Leu
450               455               460

```
Arg Glu Lys Val Asn Leu Leu Glu Arg Leu Arg Ala Glu Leu Arg Glu
465             470             475             480

Glu Arg Gln Gly His Asp Gln Met Ser Ser Gly Phe Gln His Glu Arg
                485             490             495

Leu Val Trp Lys Glu Glu Lys Glu Lys Val Ile Gln Tyr Gln Lys Gln
            500             505             510

Leu Gln Gln Ser Tyr Val Ala Met Tyr Gln Arg Asn Gln Arg Leu Glu
        515             520             525

Lys Ala Leu Gln Gln Leu Ala Arg Gly Asp Ser Ala Gly Glu Pro Leu
    530             535             540

Glu Val Asp Leu Glu Gly Ala Asp Ile Pro Tyr Glu Asp Ile Ile Ala
545             550             555             560

Thr Glu Ile


<210> 20
<211> 573
<212> PRT
<213> Homo sapiens

<400> 20
Met Gly Ser Val Ser Ser Leu Ile Ser Gly His Ser Phe His Ser Lys
  1             5              10              15

His Cys Arg Ala Ser Gln Tyr Lys Leu Arg Lys Ser Ser His Leu Lys
            20              25              30

Lys Leu Asn Arg Tyr Ser Asp Gly Leu Leu Arg Phe Gly Phe Ser Gln
        35              40              45

Asp Ser Gly His Gly Lys Ser Ser Ser Lys Met Gly Lys Ser Glu Asp
    50              55              60

Phe Phe Tyr Ile Lys Val Ser Gln Lys Ala Arg Gly Ser His His Pro
65              70              75              80

Asp Tyr Thr Ala Leu Ser Ser Gly Asp Leu Gly Gly Gln Ala Gly Val
            85              90              95

Asp Phe Asp Pro Ser Thr Pro Pro Lys Leu Met Pro Phe Ser Asn Gln
            100             105             110

Leu Glu Met Gly Ser Glu Lys Gly Ala Val Arg Pro Thr Ala Phe Lys
        115             120             125

Pro Val Leu Pro Arg Ser Gly Ala Ile Leu His Ser Ser Pro Glu Ser
    130             135             140

Ala Ser His Gln Leu His Pro Ala Pro Pro Asp Lys Pro Lys Glu Gln
```

Glu Leu Lys Pro Gly Leu Cys Ser Gly Ala Leu Ser Asp Ser Gly Arg
              165   170   175

Asn Ser Met Ser Ser Leu Pro Thr His Ser Thr Ser Ser Ser Tyr Gln
              180   185   190

Leu Asp Pro Leu Val Thr Pro Val Gly Pro Thr Ser Arg Phe Gly Gly
              195   200   205

Ser Ala His Asn Ile Thr Gln Gly Ile Val Leu Gln Asp Ser Asn Met
    210   215   220

Met Ser Leu Lys Ala Leu Ser Phe Ser Asp Gly Gly Ser Lys Leu Gly
225   230   235   240

His Ser Asn Lys Ala Asp Lys Gly Pro Ser Cys Val Arg Ser Pro Ile
              245   250   255

Ser Thr Asp Glu Cys Ser Ile Gln Glu Leu Glu Gln Lys Leu Leu Glu
              260   265   270

Arg Glu Gly Ala Leu Gln Lys Leu Gln Arg Ser Phe Glu Glu Lys Glu
              275   280   285

Leu Ala Ser Ser Leu Ala Tyr Glu Glu Arg Pro Arg Arg Cys Arg Asp
    290   295   300

Glu Leu Glu Gly Pro Glu Pro Lys Gly Gly Asn Lys Leu Lys Gln Ala
305   310   315   320

Ser Gln Lys Ser Gln Arg Ala Gln Gln Val Leu His Leu Gln Val Leu
              325   330   335

Gln Leu Gln Gln Glu Lys Arg Gln Leu Arg Gln Glu Leu Glu Ser Leu
              340   345   350

Met Lys Glu Gln Asp Leu Leu Glu Thr Lys Leu Arg Ser Tyr Glu Arg
    355   360   365

Glu Lys Thr Ser Phe Gly Pro Ala Leu Glu Glu Thr Gln Trp Glu Val
    370   375   380

Cys Gln Lys Ser Gly Glu Ile Ser Leu Leu Lys Gln Gln Leu Lys Glu
385   390   395   400

Ser Gln Thr Glu Val Asn Ala Lys Ala Ser Glu Ile Leu Gly Leu Lys
              405   410   415

Ala Gln Leu Lys Asp Thr Arg Gly Lys Leu Glu Gly Leu Glu Leu Arg
              420   425   430

Thr Gln Asp Leu Glu Gly Ala Leu Arg Thr Lys Gly Leu Glu Leu Glu
              435   440   445

Val Cys Glu Asn Glu Leu Gln Arg Lys Lys Asn Glu Ala Glu Leu Leu

```
       450                  455                  460
```

Arg Glu Lys Val Asn Leu Leu Glu Gln Glu Leu Gln Glu Leu Arg Ala
465   470   475   480

Gln Ala Ala Leu Ala Arg Asp Met Gly Pro Pro Thr Phe Pro Glu Asp
            485   490   495

Val Pro Ala Leu Gln Arg Glu Leu Glu Arg Leu Val Trp Lys Glu Glu
            500   505   510

Lys Glu Lys Val Ile Gln Tyr Gln Lys Gln Leu Gln Gln Ser Tyr Val
        515   520   525

Ala Met Tyr Gln Arg Asn Gln Arg Leu Glu Lys Ala Leu Gln Gln Leu
    530   535   540

Ala Arg Gly Asp Ser Ala Gly Glu Pro Leu Glu Val Asp Leu Glu Gly
545   550   555   560

Ala Asp Ile Pro Tyr Glu Asp Ile Ile Ala Thr Glu Ile
                565   570

<210> 21
<211> 591
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: F37 Probe

<400> 21
```
ggactctgcc cctggacctg ggaacgactg gactgtcacg gggttccctc ctagctctcc 60
cagtgaactc ctgccaggca cacacagccc ctatagcact gagctcacat gggactggga 120
tatgggggca tctcttcccc agagaggcac tcagtgagcc tcctgtgcct ggccccagtc 180
tgggccatct cttaggtgag acagttgccc gaaactaagc caggcctggc tggaggagca 240
gcagcttggg gagagggatt tccctgcaga cctcaagcca tcatgcggtg ggtgctgcca 300
tgacagaggc tgcacccctg ggccagcggg gctgctcacc cacctcttgt gcaaggtggc 360
ctttgtgctg cgcctgcagg cagagctgga gcccccagca gaggcaggct gggacggacc 420
agcatctgga agatgtacat agttattttt ctctttgtgg tttcttgttt ggtttggttt 480
gcttttgaca gcttcatttt attttttgacg tcactttttg gccatgtaaa ctatttgtgg 540
caattttatg tttttatttta tgaataaaga atgccatttc tcacgccctc t         591
```


<210> 22
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
      region amplificatin primer G12

<400> 22
```
gctgccacag cctttccaag acc                                          23
```

```
<210> 23
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
      region amplificatin primer G13

<400> 23
taccggttga gcttcttgag gtg                                           23


<210> 24
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
      region amplification primer G14.2

<400> 24
acagcttcca cagcaagcac tgc                                           23


<210> 25
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
      region amplification primer G15

<400> 25
attggagaag ggcatgagct t                                             21


<210> 26
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
      region amplification primer G16

<400> 26
tggactttga cccgtccaca cc                                            22


<210> 27
<211> 23
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
     region amplification primer IntABR

<400> 27
gtttccaacc cacttaccct tgc   23

<210> 28
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
     region amplification primer IntABF

<400> 28
gcaggggagg catgagtcac c   21

<210> 29
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
     region amplification primer G17

<400> 29
ggcttcagct cctgctcctt gg   22

<210> 30
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
     region amplification primer G20

<400> 30
acaacatcac ccagggcatc gtc   23

<210> 31
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
     region amplification primer G21

```
<400> 31
cctccagctc gtccctgcag c                                              21


<210> 32
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
     region amplification primer G32

<400> 32
actgcagctt cagcaggaga agc                                            23


<210> 33
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
     region amplification primer IntBCR

<400> 33
ctgaccaccc aaacccatga gc                                             22


<210> 34
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
     region amplification primer IntBCF

<400> 34
tcacctcttg gcactctgtc tcc                                            23


<210> 35
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
     region amplification primer Mut6

<400> 35
caggtcctgg gtcctcagct c                                              21


<210> 36
```

```
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
      region amplification primer G1

<400> 36
tgaacgccaa ggctagcgag atc                                    23


<210> 37
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
      region amplification primer G2

<400> 37
gctcctgcag ctcctgctcc ag                                     22


<210> 38
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
      region amplification primer G75

<400> 38
cccaccttcc ccgaggacgt c                                      21


<210> 39
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
      region amplification primer G82

<400> 39
agcccgagga catctggtca tgg                                    23


<210> 40
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
```

<223> Description of Artificial Sequence: FEZ1 alterable
      region amplification primer G5

<400> 40
cctgccctgc agcgggagct ggag   24

<210> 41
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
      region amplification primer G6

<400> 41
agctgctgca gggccttctc cag   23

<210> 42
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
      region amplification primer G7

<400> 42
cagtaccaga aacagctgca gcagagc   27

<210> 43
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FEZ1 alterable
      region amplification primer G8

<400> 43
ccctgcctcc cagtgccagg tc   22

<210> 44
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: First strand
      of partially-double stranded adapter-linker

<400> 44
gatctcgacg aattcgtgag acct   24

<210> 45
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Second strand
     of partially-double stranded adapter-linker

<400> 45
tggtctcacg aattcgtcga   20

<210> 46
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Donor site
     sequence of truncated FEZ1 truncation region

<400> 46
tcccaggact ccggtcacgg caa   23

<210> 47
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Acceptor site
     sequence of truncated FEZ1 truncation region

<400> 47
gagcggcaag gccatgacca g   21

<210> 48
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Donor site
     sequence of truncated FEZ1 truncation region

<400> 48
agcctgccca cacacagcac cag   23

<210> 49
<211> 21
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Acceptor site
      sequence of truncated FEZ1 truncation region

<400> 49
cagcgccggg gagcccttgg a   21

<210> 50
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Donor site
      sequence of truncated FEZ1 truncation region

<400> 50
gtgagaatga gctgcagcgc aag   23

<210> 51
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Acceptor site
      sequence of truncated FEZ1 truncation region

<400> 51
cagcagagct acgtggccat gt   22

<210> 52
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Donor site
      sequence of truncated FEZ1 truncation region

<400> 52
agctgctgcg ggagaaggtg aac   23

<210> 53
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Acceptor site
      sequence of truncated FEZ1 truncation region

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<400> 53
cagcatgagc ggctcgtgtg ga                                          22


<210> 54
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Donor  site
      sequence of truncated FEZ1 truncation region

<400> 54
aggtgaacct gctggagcag gag                                         23


<210> 55
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Acceptor site
      sequence of truncated FEZ1 truncation region

<400> 55
gagcggctgc gggccgagct gc                                          22


<210> 56
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Donor site
      sequence of truncated FEZ1 truncation region

<400> 56
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<210> 57
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Acceptor site
      sequence of truncated FEZ1 truncation region

<400> 57
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<210> 58
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer for
      amplifying FEZ1 cDNA

<400> 58
cagatgggca gcgtcagtag cctcatc   27

<210> 59
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer for
      amplifying FEZ1 cDNA

<400> 59
tcagatctca gtggctatga tgtc   24

<210> 60
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Nucleotide
      sequence of vector pQBI-AdCMV5-IRES-GFP

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<210> 61
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<220>
<223> Description of Artificial Sequence: Example

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<210> 62
<211> 11
<212> DNA
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<220>
<223> Description of Artificial Sequence: Example

<400> 62
aaccaaaaaa t   11

<210> 63
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<220>
<223> Description of Artificial Sequence: Example

<400> 63
aaccaaaaaa c   11

<210> 64
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<220>
<223> Description of Artificial Sequence: Example

<400> 64
aaccaaaaaa g   11

<210> 65

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<211> 25
<212> DNA
<213> Homo sapiens

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<400> 66
gcgcaagtcc ccccacctca agaa                                     24

<210> 67
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ggctccgaga agggtgcagt gaggccc                                  27

<210> 68
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ggctccgagg agggtgcagt gaggccc                                  27

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<400> 69
gctccagctc ccgctgcagg gcaggga                                  27

<210> 70
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